AUDIO KVM EXTENDER

USER MANUAL

CE-300

FCC Information

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy, and if not installed and used in accordance with the instruction manual, may cause interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna;
- Increase the separation between the equipment and receiver;
- Connect the equipment into an outlet on a circuit different from that which the receiver is connected;
- Consult the dealer or an experienced radio/television technician for help.

RoHS

This product is RoHS compliant.

User Notice

All information, documentation, and specifications contained in this manual are subject to change without prior notification by the manufacturer. The manufacturer makes no representations or warranties, either expressed or implied, with respect to the contents hereof and specifically disclaims any warranties as to merchantability or fitness for any particular purpose. Any of the manufacturer's software described in this manual is sold or licensed `as is'. Should the programs prove defective following their purchase, the buyer (and not the manufacturer, its distributor, or its dealer), assumes the entire cost of all necessary servicing, repair and any incidental or consequential damages resulting from any defect in the software.

The manufacturer of this system is not responsible for any radio and/or TV interference caused by unauthorized modifications to this device. It is the responsibility of the user to correct such interference.

The manufacturer is not responsible for any damage incurred in the operation of this system if the correct operational voltage setting was not selected prior to operation. PLEASE VERIFY THAT THE VOLTAGE SETTING IS CORRECT BEFORE USE.

Safety Instructions

General

- Read all of these instructions. Save them for future reference.
- Follow all warnings and instructions marked on the device.
- Do not place the device on any unstable surface (cart, stand, table, etc.). If the device falls, serious damage will result.
- Do not use the device near water.
- Do not place the device near, or over, radiators or heat registers.
- The device cabinet is provided with slots and openings to allow for adequate ventilation. To ensure reliable operation, and to protect against overheating, these openings must never be blocked or covered.
- The device should never be placed on a soft surface (bed, sofa, rug, etc.) as this will block its ventilation openings. Likewise, the device should not be placed in a built in enclosure unless adequate ventilation has been provided.
- Never spill liquid of any kind on the device.
- Unplug the device from the wall outlet before cleaning. Do not use liquid or aerosol cleaners. Use a damp cloth for cleaning.
- The device should be operated from the type of power source indicated on the marking label. If you are not sure of the type of power available, consult your dealer or local power company.
- The device is equipped with a 3-wire grounding type plug. This is a safety feature. If you are unable to insert the plug into the outlet, contact your electrician to replace your obsolete outlet. Do not attempt to defeat the purpose of the grounding-type plug. Always follow your local/national wiring codes.
- Do not allow anything to rest on the power cord or cables. Route the power cord and cables so that they cannot be stepped on or tripped over.
- If an extension cord is used with this device make sure that the total of the ampere ratings of all products used on this cord does not exceed the extension cord ampere rating. Make sure that the total of all products plugged into the wall outlet does not exceed 15 amperes.
- To help protect your system from sudden, transient increases and decreases in electrical power, use a surge suppressor, line conditioner, or un-interruptible power supply (UPS).

- Position system cables and power cables carefully; Be sure that nothing rests on any cables.
- When connecting or disconnecting power to hot-pluggable power supplies, observe the following guidelines:
  - Install the power supply before connecting the power cable to the power supply.
  - Unplug the power cable before removing the power supply.
  - If the system has multiple sources of power, disconnect power from the system by unplugging all power cables from the power supplies.
- Never push objects of any kind into or through cabinet slots. They may touch dangerous voltage points or short out parts resulting in a risk of fire or electrical shock.
- Do not attempt to service the device yourself. Refer all servicing to qualified service personnel.
- If the following conditions occur, unplug the device from the wall outlet and bring it to qualified service personnel for repair.
  - The power cord or plug has become damaged or frayed.
  - Liquid has been spilled into the device.
  - The device has been exposed to rain or water.
  - The device has been dropped, or the cabinet has been damaged.
  - The device exhibits a distinct change in performance, indicating a need for service.
  - The device does not operate normally when the operating instructions are followed.
- Only adjust those controls that are covered in the operating instructions. Improper adjustment of other controls may result in damage that will require extensive work by a qualified technician to repair.

Rack Mounting

- Before working on the rack, make sure that the stabilizers are secured to the rack, extended to the floor, and that the full weight of the rack rests on the floor. Install front and side stabilizers on a single rack or front stabilizers for joined multiple racks before working on the rack.
- Always load the rack from the bottom up, and load the heaviest item in the rack first.
- Make sure that the rack is level and stable before extending a device from the rack.
- Use caution when pressing the device rail release latches and sliding a device into or out of a rack; the slide rails can pinch your fingers.
- After a device is inserted into the rack, carefully extend the rail into a locking position, and then slide the device into the rack.
- Do not overload the AC supply branch circuit that provides power to the rack. The total rack load should not exceed 80 percent of the branch circuit rating.
- Ensure that proper airflow is provided to devices in the rack.
- Do not step on or stand on any device when servicing other devices in a rack.

Package Contents

This package consists of:

- 1 CE-300L Audio KVM Extender (Local Unit)
- 1 CE-300R Audio KVM Extender (Remote Unit)
- 1 Custom KVM Cable (1.8 m)
- 2 Power Adapters
- 2 Rack Mounting Kits
- 1 Firmware Upgrade Cable
- 1 User Manual
- 1 Quick Start Guide

Check to make sure that all the components are present and that nothing got damaged in shipping. If you encounter a problem, contact your dealer.

Read this manual thoroughly and follow the installation and operation procedures carefully to prevent any damage to the unit, and/or any of the devices connected to it.

***** Features may have been added to the CE-300 since this manual was printed. Please visit our website to download the most up to date version of the manual.

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About this Manual

This User Manual is provided to help you get the most from your c/c system. It covers all aspects of installation, configuration and operation. An overview of the information found in the manual is provided below.

Chapter 1, Introduction, introduces you to the CE-300 system. Its purpose, features and benefits are presented, and its front and back panel components are described.

Chapter 2, Hardware Setup, describes how to set up your installation. The necessary steps – from a basic single stage hookup to a complete 32 switch daisy chained operation are provided.

Chapter 3, Operation, explains the fundamental concepts involved in operating the CE-300.

Chapter 4, The Firmware Upgrade Utility, explains how to use this utility to upgrade the CE-300's firmware with the latest available versions.

An Appendix, provides specifications and other technical information regarding the CE-300.

Conventions

This manual uses the following conventions:

Monospaced	Indicates text that you should key in.
[ ]	Indicates keys you should press. For example, [Enter] means to press the **Enter** key. If keys need to be chorded, they appear together in the same bracket with a plus sign between them: [Ctrl+Alt].
1.	Numbered lists represent procedures with sequential steps.
♦	Bullet lists provide information, but do not involve sequential steps.
→	Indicates selecting the option (on a menu or dialog box, for example), that comes next. For example, Start → Run means to open the *Start* menu, and then select *Run*.
⚠	Indicates critical information.

Getting Help

If you need to contact ATEN technical support with a problem, visit or website at *www.aten.com.*

Chapter 1
Introduction

Overview

The CE-300 KVM Extender with onboard audio allows access to a computer system from a remote console (keyboard, monitor, stereo speakers, microphone and mouse). It is perfect for factory and construction sites, or any type of installation where the console needs to be in a conveniently accessible location, but you want the system equipment to reside in a safe place - away from dust, dirt, and harsh environmental influences.

The CE-300 also is useful for control and security purposes. Store the system unit in a secure area at the same time that you put the console in a location that offers convenient access.

Recognizing the increased importance of sound in the computing environment, the CE-300 improves on earlier models by incorporating audio capability. Now, audio (Stereo Microphone and Stereo Speakers) transmission can be extended to the remote system along with the KVM data.

The CE-300 KVM Extender plus Audio provides the ideal means to access the remote system box, since it improves on previous designs by using the compact Category 5 cable - the kind commonly used in Ethernet networks - instead of bulkier, more expensive, standard cables. Category 5 cabling makes for a much neater, more convenient, more reliable data transfer connection.

The CE-300 features a custom ASIC to ensure the utmost in reliability and compatibility, and can also sense the distance to the system and automatically adjust the gain to compensate.

Setup is as easy as can be - simply connect the computer system box and local console to the Local CE-300 Module; run the Cat 5 cable to the Remote CE-300 Module (up to 100 meters away); and plug the remote console into the Remote Module.

Note: You can control numerous remote systems from a single console by combining the CE-300 with a KVM switch.

Features

- Built-in ASIC for greater reliability and compatibility
- Cat 5 Ethernet cable to connect the local and remote units - up to 100 m apart
- Dual console operation - control your system from both the local and remote consoles (ps/2 keyboard, mouse, stereo speakers, stereo microphone and monitor)
- Pushbutton selection of the active console
- High resolution video - up to 1280 x 1024 @ 60 HZ at 100m
- Supports VGA, SVGA, and Multisync monitors
- Local monitor supports DDC; DDC2; DDC2B
- Automatic gain control - automatically adjusts signal strength to compensate for distance
- Supports Stereo Speakers And Stereo Microphone
- Upgradable firmware

System Requirements

Consoles

- A VGA, SVGA, or Multisync monitor capable of the highest resolution that you will be using on any computer in the installation
- A PS/2 style keyboard
- A PS/2 style mouse
- Stereo microphone and stereo speakers (optional)

Note: If you connect a DDC type monitor to the Local unit, the monitor that connects to the Remote unit must be able to support the highest video resolution that the DDC monitor can provide.

Computers

The following equipment must be installed on each computer that is to be connected to the system:

- A VGA, SVGA or Multisync card.
- A 6-pin mini-DIN mouse port
- A 6-pin mini-DIN keyboard port

Operating Systems

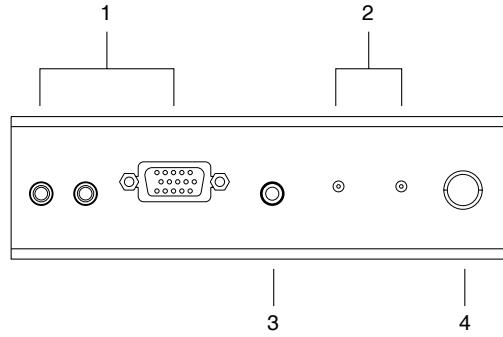
- DOS: 6.22 and higher
- Windows: 95 and higher
- Linux: Red Hat 6.0 and higher; Mandrake/Mandriva 9.0 and higher; SUSE 8.2 and higher
- FreeBSD: 3.5.1 and higher
- Netware: 5.0 and higher
- OS/2: 2.0 and higher
- AIX: 4.3 and higher

Cables

- Although it is possible to use standard KVM cables to link computers with PS/2 type keyboard and mouse ports to the CE-300L, for optimum signal integrity and to simplify the layout, we strongly recommend that you use the high quality custom KVM cable sets provided with this package.
- It is not possible to use standard KVM cables to link computers with AT type keyboard and mouse ports to the CE-300L. For those computers, custom KVM cable sets must be used. Contact your dealer for details.
- Category 5 cable is the minimum required to connect the local and remote CE-300 units. Cable of a lesser standard will result in degraded video signals. For best performance, we strongly recommend Category 5 cable.

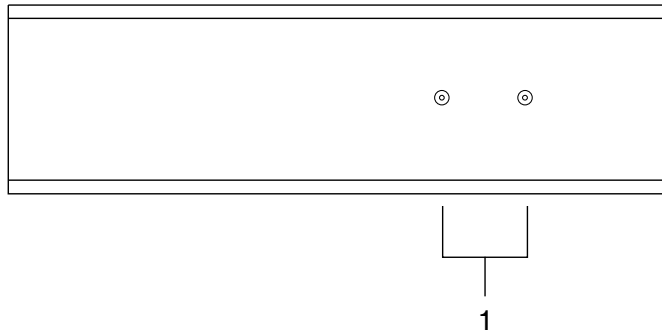
Components

C-300L (Local Unit) Front View



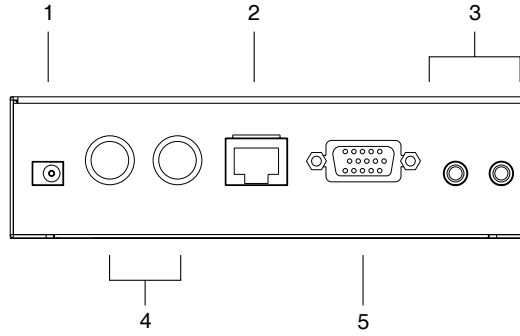
No.	Component	Description
1	KVM Port Section	This section is made up of a microphone jack, speaker jack and KVM (keyboard, video, mouse), data connector. The cable that links the CE-300L to your local KVM console plugs in here. Only KVM cables designed to work with this switch can plug in (see *Cables*, page 4, for details).
2	LEDs	The Local Unit has two LEDs to indicate the operating status of the Local and Remote units (see page 11, for details).
3	Firmware Upgrade Port	The Firmware Upgrade Cable that transfers the firmware upgrade data from the administrator's computer to the CE-300L plugs into this connector.
4	Operating Mode Selection Switch	Pressing this switch cycles through the operating mode choices: ◆ Local: Only the local console can control the system(s) - the default. ◆ Auto: both consoles can control the system(s); ◆ Remote: only the remote console can control the system(s).

CE-300R (Remote Unit) Front View



No.	Component	Description
1	On Line / Power On LEDs	These LEDs indicate the operating status of the Local and Remote units (see page 12, for details).

CE-300L / CE-300R Rear View



No.	Component	Description
1	Power Jack	The cable from the AC Power Adapter plugs into this jack.
2	Remote I/O	The Category 5 twisted pair cable that connects the Remote and Local units plugs into this connector.
3	Console Audio Jacks	The stereo microphone and stereo speaker plugs of the custom KVM cable supplied with this package plug into these jacks. The jacks and plugs are color coded and marked with an appropriate icon to indicate themselves.
4	Keyboard and Mouse Ports	The PS/2 keyboard and mouse connectors of the custom KVM cable supplied with this package plug into these ports. The connectors and ports are color coded and marked with an appropriate icon to indicate themselves.
5	Monitor Port	The monitor connector of the custom KVM cable supplied with this package plugs into this port.

Note: If you are combining the CE-300 with a KVM switch, the custom KVM cable connects back to the respective ports on the Console section of the switch.

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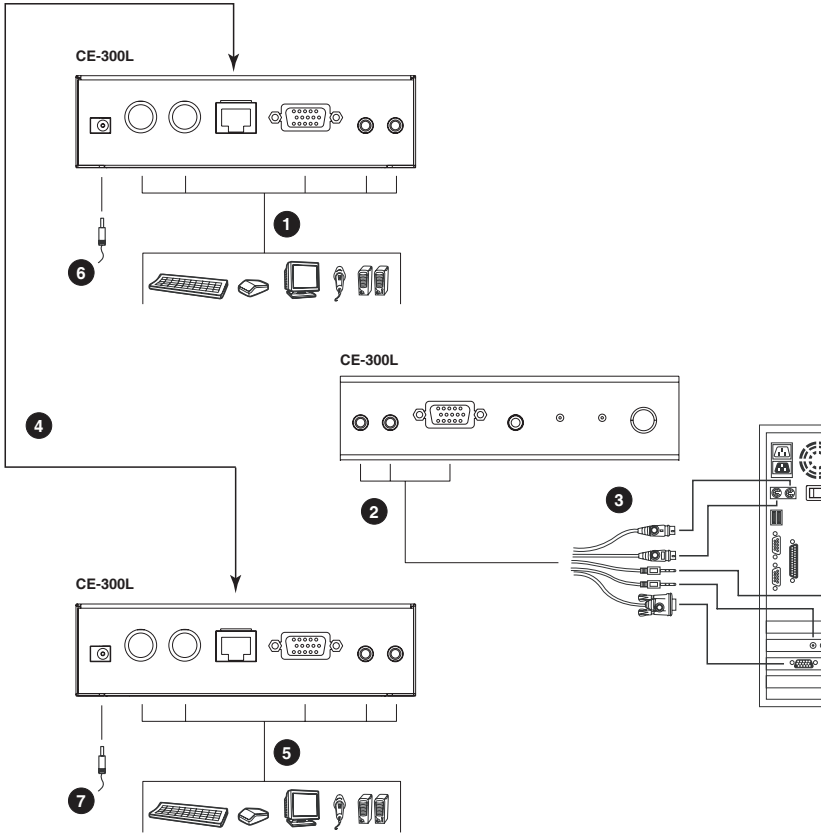
Chapter 2
Hardware Setup

1. Important safety information regarding the placement of this device is provided on page iv. Please review it before proceeding.
2. Make sure that power to all the devices you will be connecting up have been turned off. You must unplug the power cords of any computers that have the Keyboard Power On function.

Setting up the KVM Extender System is simply a matter of plugging in the cables. Refer to the installation diagram on the next page as you perform the following steps (the diagram numbers correspond to the numbers of the steps):

1. Plug the cables from the local console devices (mouse, keyboard, monitor, microphone and speakers) into their ports on the rear panel of the Local Unit (CE-300L). The connectors are color coded and marked with an icon to identify themselves.
2. Plug the connectors on the custom KVM cable provided with this package into their appropriate ports on the CE-300L's front panel. The connectors are color coded and marked with an icon to identify themselves.
3. Plug the connectors on the other end of the custom KVM cable into their appropriate ports on the computer system (or Console section of the KVM switch - if you are using one).
4. Connect one end of a Category 5 twisted pair cable to the Remote I/O port on the CE-300L; connect the other end into the Remote I/O port on the CE-300R.
5. Plug the cables from the remote console devices (mouse, keyboard, monitor, microphone and speakers) into their ports on the rear panel of the Remote Unit (CE-300R).
6. Connect one of the power adapters provided with this package into an AC source; connect the adapter's power cable to the Power Jack on the CE-300L.
7. Connect the other power adapter provided with this package into an AC source; connect the adapter's power cable to the Power Jack on the CE-300R.


CE-300L
CE-300L
CE-300L
1
2
3
4
5
6
7

Chapter 3
Operation

The CE-300 Local and Remote Units each have two LEDs to indicate their operating status, as shown in the tables below:

CE-300L (Local Unit)

LED	Operating Mode		
	Local	**Auto**	**Remote**
Local	Lights to indicate that the local console is active (the Remote LED is out).	◆ Lights when the local console is active (the Remote LED is off). ◆ Turns off when the remote console is active (the Remote LED turns on. ◆ Flashes on and off alternately with the Remote LED when neither console is active.	The LED is Of
Remote	The LED is Off.	◆ Lights when the remote console is active (the Local LED is off). ◆ Turns off when the local console is active (the Local LED turns on). ◆ Flashes on and off alternately with the Local LED when neither console is active.	Lights to indicate that the remote console is active (the Local LED is off).

CE-300R (Remote Unit)

LED	Indication
Power	◆ Lights steadily to indicate that the connection to the Local Unit is OK. ◆ Flashes when there is a problem with the connection to the Local Unit.
On Line	◆ Lights when the remote console is active. ◆ Is Off when the local console is active. ◆ Is Off when there is a problem with the connection to the Local Unit.

Chapter 4
The Firmware Upgrade Utility

The Windows-based Firmware Upgrade Utility (FWUpgrade.exe) provides a smooth, automated process for upgrading the KVM switch's firmware.

The Utility comes as part of a Firmware Upgrade Package that is specific for each device. New firmware upgrade packages are posted on our web site as new firmware revisions become available. Check the web site regularly to find the latest packages and information relating to them:

```
http://www.aten.com
```

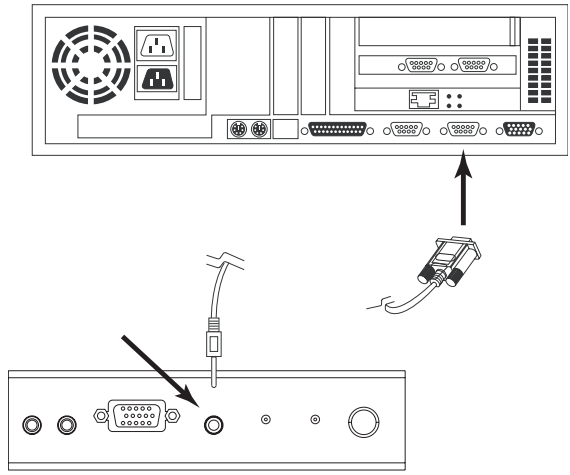
Before You Begin

To prepare for the firmware upgrade, do the following:

1. From a computer that is not part of your KVM installation go to our Internet support site and choose the model name that relates to your device (CE-300) to get a list of available Firmware Upgrade Packages.
2. Choose the Firmware Upgrade Package you want to install (usually the most recent), and download it to your computer.
3. Shut down the computers on your CE-300 installation.
4. Turn the power of the Remote unit on. Connect the Cat 5 cable from the Remote Unit to the Local Unit.
5. Press and hold the select button. Then turn the power for the Local unit on.
6. Wait until both front panel green LEDs on the Local unit are flashing on and off to release the select button.
7. Check to see if the orange LED on the front panel of the Remote unit is on to indicate that Firmware Upgrade Mode is in effect. (If the LED is blinking or not on, the unit is not ready to upgrade the firmware. You must repeat steps 5 and 6 again.)

(Continues on next page.)

8. Use the provided *Firmware Upgrade Cable* to connect a COM port on your computer to the *Firmware Upgrade Port* on the switch.

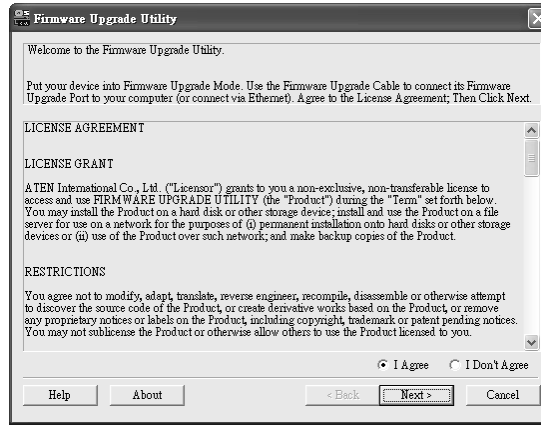


Starting the Upgrade

To upgrade your firmware:

1. Run the downloaded Firmware Upgrade Package file - either by double clicking the file icon, or by opening a command line and entering the full path to it.

   The Firmware Upgrade Utility *Welcome* screen appears:

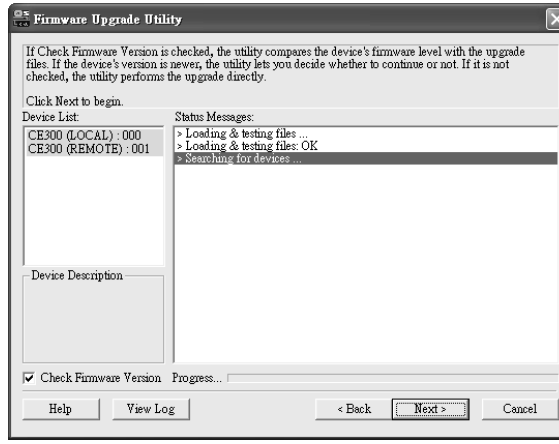

Firmware Upgrade Utility
Welcome to the Firmware Upgrade Utility.
Put your device into Firmware Upgrade Mode. Use the Firmware Upgrade Cable to connect its Firmware Upgrade Port to your computer (or connect via Ethernet). Agree to the License Agreement; Then Click Next.
LICENSE AGREEMENT
LICENSE GRANT
ATEN International Co., Ltd. ("Licensor") grants to you a non-exclusive, non-transferable license to access and use FIRMWARE UPGRADE UTILITY (the "Product") during the "Term" set forth below. You may install the Product on a hard disk or other storage device; install and use the Product on a file server for use on a network for the purposes of (i) permanent installation onto hard disks or other storage devices or (ii) use of the Product over such network; and make backup copies of the Product.
RESTRICTIONS
You agree not to modify, adapt, translate, reverse engineer, recompile, disassemble or otherwise attempt to discover the source code of the Product, or create derivative works based on the Product, or remove any proprietary notices or labels on the Product, including copyright, trademark or patent pending notices. You may not sublicense the Product or otherwise allow others to use the Product licensed to you.
I Agree
I Don't Agree
Help
About
< Back
Next >
Cancel

Note: The screens shown in this section are for reference only. The wording and layout of the actual screens put up by the Firmware Upgrade Utility may vary slightly from these examples.

2. Read and *Agree* to the License Agreement (enable the *I Agree* radio button).

(Continues on next page.)

3. Click Next to continue. The Firmware Upgrade Utility main screen appears:

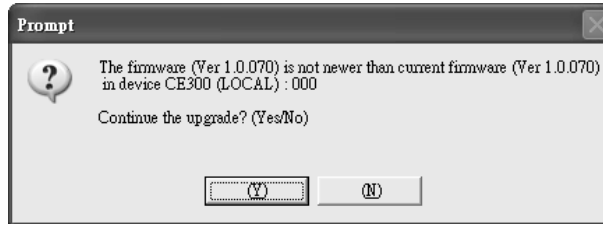

Firmware Upgrade Utility
If Check Firmware Version is checked, the utility compares the device's firmware level with the upgrade files. If the device's version is newer, the utility lets you decide whether to continue or not. If it is not checked, the utility performs the upgrade directly.
Click Next to begin.
Device List:
CE300 (LOCAL) : 000
CE300 (REMOTE) : 001
Status Messages:
> Loading & testing files ...
> Loading & testing files: OK
> Searching for devices ...
Device Description
Check Firmware Version
Progress...
Help
View Log
< Back
Next >
Cancel

The Utility inspects your installation. All the devices capable of being upgraded by the package are listed in the *Device List* panel.

4. As you select a device in the list, its description appears in the *Device Description* panel.

5. After you have made your device selection(s), Click **Next** to perform the upgrade.

   If you enabled *Check Firmware Version*, the Utility compares the device's firmware level with that of the upgrade files. If it finds that the device's version is higher than the upgrade version, it brings up a dialog box informing you of the situation and gives you the option to Continue or Cancel.

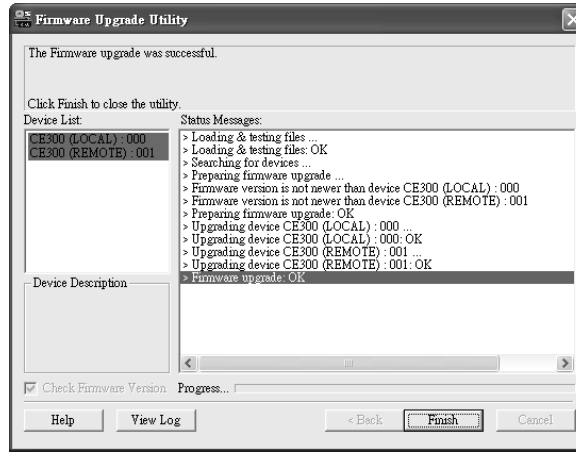

Prompt
The firmware (Ver 1.0.070) is not newer than current firmware (Ver 1.0.070) in device CE300 (LOCAL) : 000
Continue the upgrade? (Yes/No)
(Y)
(N)

If you did not enable *Check Firmware Version*, the Utility installs the upgrade files without checking whether or not they are a higher level.

As the Upgrade proceeds, status messages appear in the Status Messages panel, and the progress toward completion is shown on the *Progress* bar.

Upgrade Succeeded

After the upgrade has completed, a screen appears to inform you that the procedure was successful:


Firmware Upgrade Utility
The Firmware upgrade was successful.
Click Finish to close the utility.
Device List:
CE300 (LOCAL) : 000
CE300 (REMOTE) : 001
Status Messages:
> Loading & testing files ...
> Loading & testing files: OK
> Searching for devices ...
> Preparing firmware upgrade ...
> Firmware version is not newer than device CE300 (LOCAL) : 000
> Firmware version is not newer than device CE300 (REMOTE) : 001
> Preparing firmware upgrade: OK
> Upgrading device CE300 (LOCAL) : 000 ...
> Upgrading device CE300 (LOCAL) : 000: OK
> Upgrading device CE300 (REMOTE) : 001 ...
> Upgrading device CE300 (REMOTE) : 001: OK
> Firmware upgrade: OK
Device Description
Check Firmware Version
Progress...
Help
View Log
< Back
Finish
Cancel

Click **Finish** to close the Firmware Upgrade Utility.

After successfully upgrading the firmware, the switches automatically exit Firmware Upgrade Mode.

Upgrade Failed

If the *Upgrade Succeeded* screen does not appear, then the upgrade failed to complete successfully. You should repeat the upgrade procedure from the beginning.

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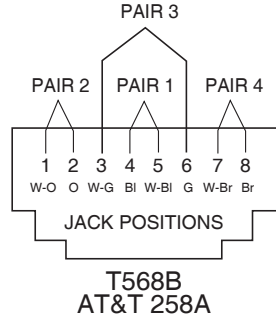
Appendix

Specifications

Function			CE-300L	CE-300R
Computer Connections			1	N/A
Connectors	Console	KB	1 x 6-pin Mini-DIN Female (Purple)	
		Video	1 x HDB-15 Female (Blue)	
		Mouse	1 x 6-pin Mini-DIN Female (Green)	
		Speaker	1 x Mini Stereo Jack (Green)	
		Microphone	1 x Mini Stereo Jack (Pink)	
	KVM Port	Keyboard	1 x SPHD-15 Female (Yellow)	N/A
		Video		
		Mouse		
		Speaker	1 x Mini Stereo Jack (Green)	N/A
		Microphone	1 x Mini Stereo Jack (Pink)	N/A
	F/W Upgrade		1 x Mini Stereo Jack (Black)	N/A
	Power		1 x DC Jack (Black)	
	Unit to Unit		1 x RJ-45 (Black)	
Switches	Local/Remote Select		1 x Pushbutton	N/A
LEDs	On Line		N/A	
	Power		N/A	
	Local			N/A
	Remot			N/A
I/P Rating			DC 5.3 V; 2.4 A	
Power Consumption			2.5 W	
Video			1280 x 1024 @ 60Hz; DDC2B (Local monitor only)	
Cable Length			150 m (500') max.	
Environment	Operating Temp.		0–50^{o} C	
	Storage Temp.		-20–60^{o} C	
	Humidity		0–80% RH	
Physical Properties	Housing		Metal	
	Weight		.375 kg	.365 kg
	Dimensions (L x W x H)		13.9 x 8.8 x 3.8 cm	13.9 x 8.3 x 3.8 cm

TP Wiring Diagram



TP Pin Assignments

Pin	Assignment
1	/V OUT B
2	V OUT B
3	/V OUT G
4	/V OUT R
5	V OUT R
6	V OUT G
7	/DO
8	DO

Troubleshooting

Problem	Action
No Video	Make sure that all cables are securely plugged into their sockets.

Limited Warranty

IN NO EVENT SHALL THE DIRECT VENDOR'S LIABILITY EXCEED THE PRICE PAID FOR THE PRODUCT FROM DIRECT, INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES RESULTING FROM THE USE OF THE PRODUCT, DISK, OR ITS DOCUMENTATION.

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